

OBSERVATIONS OF *HYPOLYCAENA PHORBAS PHORBAS* (FABRICIUS) (LEPIDOPTERA: LYCAENIDAE) ON CARLISLE ISLAND, QUEENSLAND

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Two new food plants of *Hypolycaena phorbis phorbis* (Fabricius) are recorded, viz.: *Clerodendrum inerme* (L.) Gaertn. (Verbenaceae) and *Cerriops tagal* (Perr.) C.B. Rob. (Rhizophoraceae) and further details of the association of the larvae of this lycaenid with the green tree ant, *Oecophylla smaragdina* (Fabricius) are recorded.

Introduction

Amongst the 49 species of butterflies recorded during the Queensland Naturalists' Club field trip to Carlisle Island (20°47'S, 149°17'E) in December, 1986 (Reeves 1988), one of the commonest was *Hypolycaena phorbis phorbis* (Fabricius). Its larvae were found feeding on five different plant species (including two mangroves) of which two are previously unrecorded. Observations of the symbiotic relationship between this butterfly and the green tree ant *Oecophylla smaragdina* (Fabricius), elucidated details of the form and function of larval and pupal leaf shelters.

Observations

On a spinifex-covered sand embankment above the beach on Carlisle Island's western side at about noon in bright sunshine, a female *H. phorbis* was observed depositing eggs (singly) on stems of the shrub *Clerodendrum inerme* (L.) Gaertn. (Verbenaceae). Young larvae were feeding on some of the newer foliage while being attended by green tree ants and final instar larvae and pupae were in shelters, made from living cordate shaped leaves of a scrambler, *Stephania japonica* (Thunb.) Miers (Menispermaceae), which incompletely covered the *C. inerme*. The shape of these shelters was, in most cases, a tetrahedron with the base missing. After dark the final instar larvae left the shelters and fed on young *C. inerme* leaves with the ants still in attendance. The larvae did not appear to feed on the *S. japonica* leaves.

Messrs D. Reeves and C. Hembrow drew my attention to *H. phorbis* larvae on the mangrove *Lumnitzera racemosa* Willd. (Combretaceae), bordering a tidal creek. This mangrove was in flower and adult butterflies were feeding on it, with females ovipositing (singly) on the undersides of new foliage. Valentine and Johnson (1988) mention this mangrove and other plants as new food plants of *H. phorbis*. First and final instar larvae and pupae were found in shelters of the young terminal foliage, with the leaves arising from the stem in whorls of four and separate leaf tips, meeting at the apex, being fastened with silk, giving the appearance of a square pyramid. I did not see the shelters being constructed, so cannot say whether the silk was produced by the lycaenid larvae or ant larvae from nearby nests but *O. smaragdina* is well known for its habit of building webbed enclosures around the insects it attends (Dodd 1902; Benzie 1985).

Larvae were also found on *Ceriops tagal* (Perr.) C.B. Rob. (Rhizophoraceae) again attended by green tree ants but no leaf shelters were evident. The milky mangrove *Excoecaria agallocha* L. (Euphorbiaceae) was also in flower and many adult butterflies were feeding on its inflorescences, but no oviposition was observed, and no larvae or pupae were found, although the ants were present in smaller numbers.

Three other food plants of this butterfly occurred on the island. Eggs and larvae in company with ants were found on *Planchonia careya* (F. Muell.) Knuth (Lecythidaceae) and *Cupaniopsis anacardioides* (A. Rich.) Radlk. (Sapindaceae). Specimens of *Flagellaria indica* L. (Flagellariaceae) were too inaccessible for thorough searching.

Discussion

The above records bring to 15 the total number of food plants in ten families, showing the food preference versatility of this butterfly. Several of these food plants occur much further south than the southern limit of the butterfly's distribution, which is about the Tropic of Capricorn or Yeppoon on the Queensland coast (Common and Waterhouse 1981). Reeves (1988) has postulated that the limiting factor may be the presence of the green tree ant which also extends only south to Yeppoon (Lokkers 1986). This may also explain why Yeppoon is the apparent southern limit of the range of other lycaenid species, including *Anthene seltuttus affinis* (Waterhouse and Turner) and three species of *Arhopala* Boisduval which are also attended by *O. smaragdina* (Common and Waterhouse 1981).

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